DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	DODGE POND	Lake Area (ha):	5.06
Town:	NEW BOSTON	Maximum depth (m):	3.0
County:	Hillsborough	Mean depth (m):	1.0
River Basin:	Merrimack	Volume (m^3):	49000
Latitude:	42°59'47" N	Relative depth:	1.2
Longitude:	71°41'42" W	Shore configuration:	3.07
Elevation (ft):	495	Areal water load (m/yr):	31.16
Shore length (m):	2450	Flushing rate (yr^{-1}):	32.20
Watershed area (ha):	327.0	P retention coeff.:	0.43
% watershed ponded:	0.1	Lake type:	natural

BIOLOGICAL:		5 February 1998	29 July 1997
DOM. PHYTOPLANKTON (% TOTAL)	#1	SPARSE - NO DOMINANT	CHRYSOSPHAERELLA 60%
	#2		
	#3		
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			17.21
DOM. ZOOPLANKTON (% TOTAL)	#1	LRG RND CILIATE SPP 44%	KERATELLA 25%
	#2	KELLICOTTIA 31%	CALANOID COPEPOD 13%
	#3	KERATELLA 22%	CYCLOPOID COPEPOD 12%
ROTIFERS/LITER		265	132
MICROCRUSTACEA/LITER		12	122
ZOOPLANKTON ABUNDANCE (#/L)		495	254
VASCULAR PLANT ABUNDANCE			Very abundant
SECCHI DISK TRANSPARENCY (m)			1.8
BOTTOM DISSOLVED OXYGEN (mg/L)			0.3
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : 1500

CHEMICAL:

Lake: DODGE POND
Town: NEW BOSTON

	5 February 1998		29 July 1997		
DEPTH (m)	1.0	3.0	1.0		2.0
pH (units)	5.7	5.7	6.6		6.4
A.N.C. (Alkalinity)	6.5	13.0	8.7		9.1
NITRATE NITROGEN	0.18	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.40	0.80	0.60		0.70
TOTAL PHOSPHORUS	0.036	0.045	0.029		0.038
CONDUCTIVITY (µmhos/cm)	129.9	147.2	94.6		93.2
APPARENT COLOR (cpu)	40	55	36		38
MAGNESIUM			1.14		
CALCIUM			4.4		
SODIUM			12.1		
POTASSIUM			0.29		
CHLORIDE	30	31	20		20
SULFATE	6	7	3		3
TN : TP	16	19	21		18
CALCITE SATURATION INDEX			3.1		

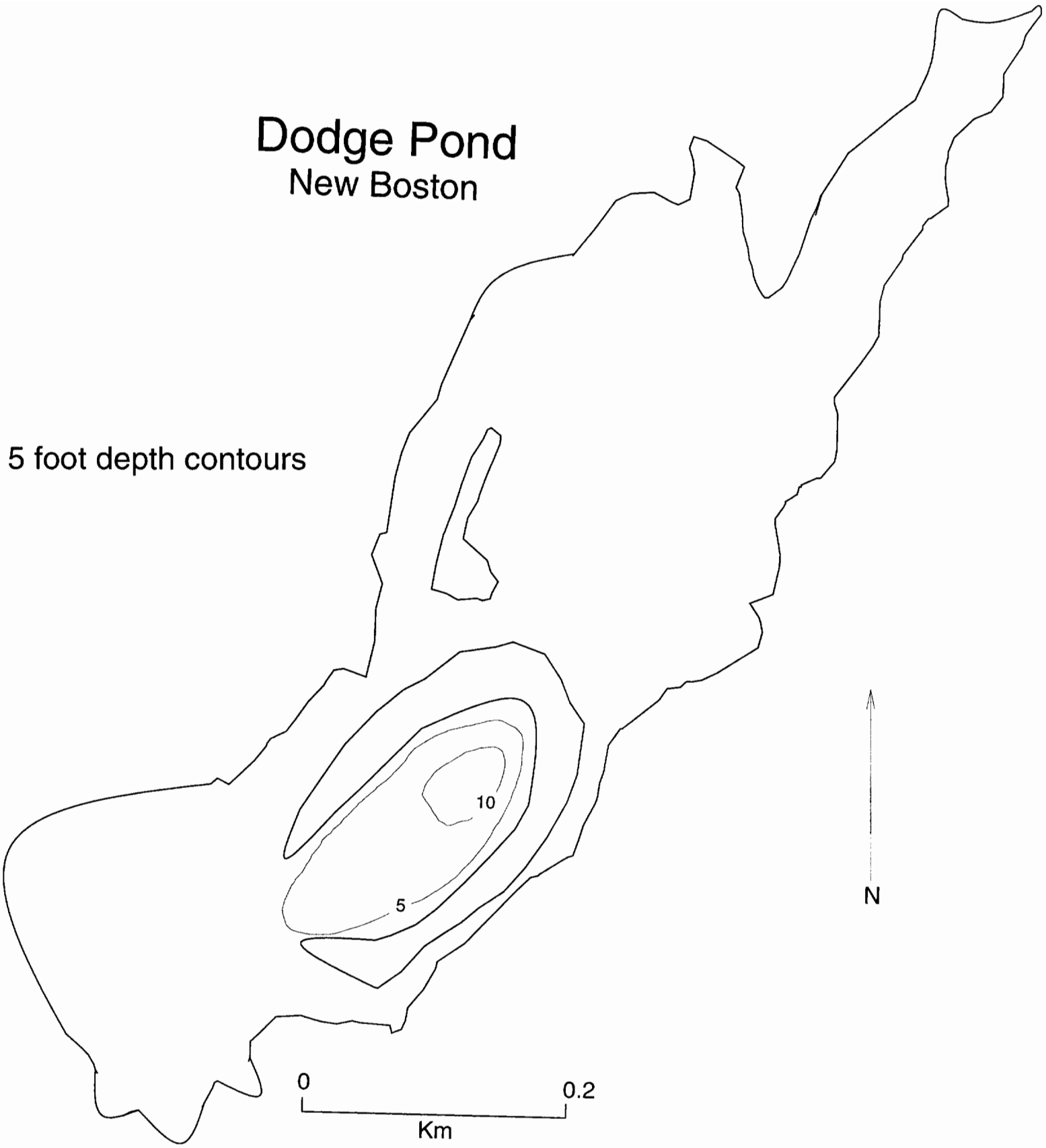
All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1997

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	6	3	13	Eutro.

COMMENTS:

1. This is essentially a very small pond (see bathymetric map) that was raised by a beaver dam. When the dam is out, only the 10 foot contour remains as a pond, surrounded by a wet meadow.
2. Two beaver huts were present.
3. This is a very productive pond with abundant macrophyte growth, elevated chlorophyll levels and poor clarity. Sodium and chloride levels suggest some salted road runoff.


Dodge Pond
New Boston
5 foot depth contours
10
5
N
0
0.2
Km

FIELD DATA SHEET

LAKE: DODGE POND
DATE: 07/29/97

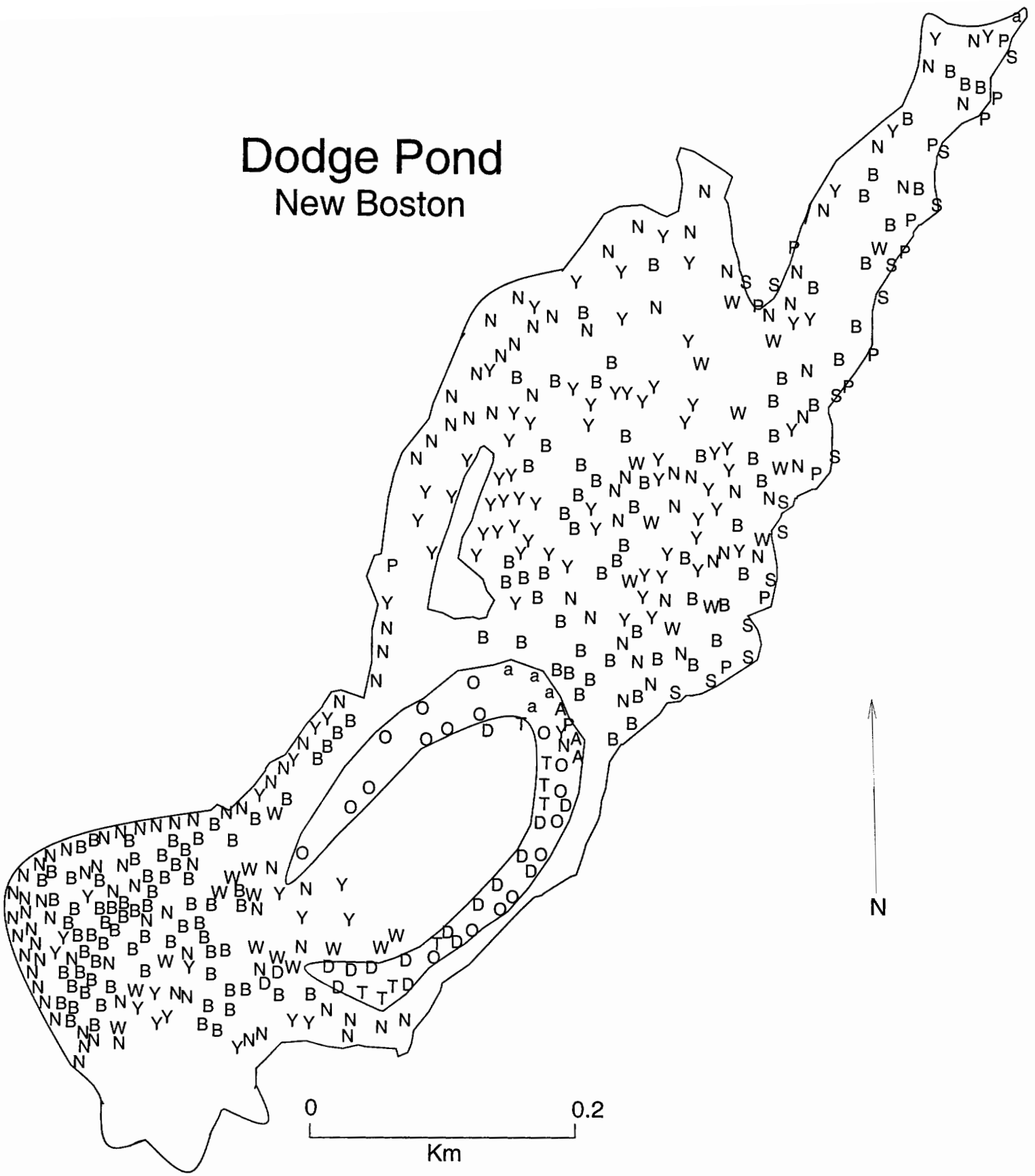
TOWN: NEW BOSTON
WEATHER: SUNNY, BREEZY & WARM

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	24.2	7.7	90 %
	1.0	23.9	7.6	88 %
	2.0	21.0	1.1	12 %
	3.0	19.0	0.3	3 %

SECCHI DISK (m): 1.8
BOTTOM DEPTH (m): 3.0
TIME: 1210

COMMENTS:

*Dissolved oxygen values are in mg/L


Dodge Pond
New Boston
N
0
0.2
Km

AQUATIC PLANT SURVEY

LAKE: DODGE POND TOWN: NEW BOSTON DATE: 07/29/97

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
N	Nymphaea	White water lily	Abundant
P	Pontederia cordata	Pickerelweed	Common
Y	Nuphar	Yellow water lily	Abundant
a	Peltandra virginica	Arrow arum	Scattered
S	Sparganium	Bur reed	Common
B	Brasenia schreberi	Water shield	Abundant
W	Potamogeton	Pondweed	Abundant
A	Sagittaria	Arrowhead	Scattered
D	Decodon verticillatus	Swamp loosestrife	Scattered
O	Cephalanthus occidentalis	Buttonbush	Scattered
U	Utricularia	Bladderwort	Abundant
T	Typha	Cattail	Scattered

OVERALL ABUNDANCE: Very abundant

GENERAL OBSERVATIONS:

1. Most of this pond is a shallow beaver pond with dense plant growth.
2. Bladderwort was abundant throughout the pond.
3. Filamentous algae was abundant around the entire shoreline and entangled in the macrophyte beds.
4. Coontail (*Ceratophyllum)* fragments were observed but were not located on the map.
5. Several species of *Potamogeton* were present.